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In the Supreme Court of the United States

ERIC ELDRED *et al.*,

Petitioners,

v.

JOHN D. ASHCROFT, ATTORNEY GENERAL,

Respondent.

On Writ of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

BRIEF OF GEORGE A. AKERLOF, KENNETH J. ARROW, TIMOTHY F. BRESNAHAN, JAMES M. BUCHANAN, RONALD H. COASE, LINDA R. COHEN, MILTON FRIEDMAN, JERRY R. GREEN, ROBERT W. HAHN, THOMAS W. HAZLETT, C. SCOTT HEMPHILL, ROBERT E. LITAN, ROGER G. NOLL, RICHARD SCHMALENSEE, STEVEN SHAVELL, HAL R. VARIAN, AND RICHARD J. ZECKHAUSER AS AMICI CURIAE IN SUPPORT OF PETITIONERS

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INTEREST OF THE AMICI CURIAE[1]

Amici are professors and scholars who teach and write on economic issues and are concerned about the role of government in promoting economic progress. They are George A. Akerlof, Kenneth J. Arrow, Timothy F. Bresnahan, James M. Buchanan, Ronald H. Coase, Linda R. Cohen, Milton Friedman, Jerry R. Green, Robert W. Hahn, Thomas W. Hazlett, C. Scott Hemphill, Robert E. Litan, Roger G. Noll, Richard Schmalensee, Steven Shavell, Hal R. Varian, and Richard J. Zeckhauser. Various amici have taught, researched, and published analyses of the economics of innovation and the effect of government policy on the incentive to create new works. A summary of the qualifications and affiliations of the individual amici is provided at the end of this brief. Amici file this brief solely as individuals and not on behalf of the institutions with which they are affiliated. Amici represent neither party in this action, and offer the following views on this matter.

SUMMARY OF ARGUMENT

This brief provides an economic analysis of the main feature of the Copyright Term Extension Act of 1998 ("CTEA"), a twenty-year extension of the copyright term for existing and future works.[2] An economist's perspective may be helpful to the Court as it considers Congress's reasons for passing the CTEA, particularly with respect to the extension for existing works.

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[1] The parties have consented to the submission of this brief, and their letters of consent have been filed with the Clerk of this Court. This brief was not written in whole or in part by counsel for a party. Amici and their counsel were not compensated in any way; the Stanford Institute for Economic Policy Research defrayed printing costs.

[2] Copyright Term Extension Act of 1998, Pub. L. No. 105-298, 112 Stat. 2827. In addition, this brief analyzes one ancillary economic effect of the CTEA, a longer term in Europe for U.S. copyright holders under Europe's "rule of the shorter term."

One possibility is that Congress sought a policy that confers a net economic benefit, after subtracting the expected costs. The main economic benefit from copyright protection is to give an author an incentive to create new works. The size of this economic incentive depends upon the "present value" of compensation, as anticipated by the author at the time of creation.

The two components of the CTEA differ markedly in their economic effect. The longer term for *new* works provides some increase in anticipated compensation for an author. Because the additional compensation occurs many decades in the future, its present value is small, very likely an improvement of less than 1% compared to the pre-CTEA term. This compensation offers at most a very small additional incentive for an economically minded author of a new work. The term extension for *existing* works makes no significant contribution to an author's economic incentive to create, since in this case the additional compensation was granted after the relevant investment had already been made.

The CTEA has two further effects on economic efficiency. First, the CTEA extends the period during which a copyright holder determines the quantity produced of a work, and thus increases the inefficiency from above-cost pricing by lengthening its duration. With respect to the term extension for new works, the present value of the additional cost is small, just as the present value of incremental benefits is small. By contrast, the cost of term extension in existing works is much larger in present value, especially for works whose copyrights would soon or already have expired but for the CTEA.

Second, the CTEA extends the period during which a copyright holder determines the production of derivative works, which affects the creation of new works that are built in part out of materials from existing works. Where building-block materials are copyrighted, new creators must pay to use those materials, and may incur additional costs in locating and negotiating with copyright holders. Such transaction costs are

especially large where the copyright holders whose permissions are required are numerous or difficult to locate. By reducing the set of building-block materials freely available for new works, the CTEA raises the cost of producing new works and reduces the number created.

Taken as a whole, it is highly unlikely that the economic benefits from copyright extension under the CTEA outweigh the additional costs. Moreover, in the case of term extension for existing works, the sizable increase in cost is not balanced to any significant degree by an improvement in incentives for creating new works. Considering the criterion of consumer welfare instead of efficiency leads to the same conclusion, with the alteration that the CTEA's large transfer of resources from consumers to copyright holders is an additional factor that reduces consumer welfare.

ARGUMENT

I. IT IS HIGHLY UNLIKELY THAT THE ECONOMIC BENEFITS FROM COPYRIGHT EXTENSION UNDER THE CTEA OUTWEIGH THE COSTS

A. The CTEA Provides At Most A Very Small Benefit To Innovation

1. Copyright solves a special problem in the technology of production of creative works

To the extent that a concern for economic values motivates copyright policy, it is important to understand its main benefits and costs. In basic terms, copyright protection grants a monopoly over the distribution and sale of a work and certain new works based upon it. The copyright monopoly has several costs, which are described at pages 10-12 and 12-15 below. In addition, copyright protection provides a benefit to society by providing incentives for the production of new creative works.

The main economic rationale for copyright is to supply a sufficient incentive for creation.[3] To produce a new book, film, or other creative work, an author must make a substantial up-front investment.[4] For the resulting work to be profitable overall, the author must recoup her initial investment through sales of the work to consumers. An economically minded author will recognize this and invest in creation only if the expected returns, after paying per-unit (or "marginal") costs, are larger than the up-front investment; otherwise the author would lose money overall.

The recovery of up-front costs is a general concern for many producers, but authors face a special kind of economic problem, due to the technology of production for creative works. To understand this, consider the position of a second competitor, who wishes to make the same product as the first entrant into a market. For products generally, the second competitor must incur the same kinds of costs as the original entrant in order to participate in the market. Books, films, and other creative works are different: without legal protection, an author cannot prevent others from appropriating the fruits of the initial investment. Here, a second competitor can quickly enter the market by simply copying the work and offering it for sale, without incurring similar development costs. Without the ability to exclude, entry may be easy and quick, the resulting fall in prices to marginal cost can be rapid, and non-recovery of initial investment by the author is very likely. In this

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[3] For two classic accounts, see William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright*, 18 J. LEGAL STUD. 325 (1989); Stephen G. Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970).

[4] The incentives of copyright affect publishers as well as authors, but the same arguments apply to the initial publisher as to the author.

environment, an author has less of an incentive to produce new works.[5]

In economic terms, then, copyright provides incentives for creation by solving the special problem of non-excludability of creative works, assuring authors an opportunity to recoup their initial investment in creation. The economic value of a change in copyright policy depends upon the extent to which it increases incentives for creation. The CTEA lengthens the copyright term by twenty years, for both new works and existing works. As the economic value differs for the two kinds of extension, each case is considered in turn.

2. The CTEA's longer copyright for new works provides at most a very small additional incentive

The CTEA lengthens the copyright term for new works from life-plus-fifty years to life-plus-seventy years for individual authors, and from seventy-five years to ninety-five years for works for hire. Thus, the additional compensation from term extension accrues over a number of years. To evaluate and compare the magnitude of cash flows that occur in the future, economists use concepts of "present value" and "future value."

For a given amount of money today, future value is the amount that money would be worth at some point in the future. For example, if the interest rate is 7%, $1 today has a future value of $1.07 a year from now. Present value is the reciprocal of future value; thus $1.07 next year has a present value of $1 today. One dollar, received a year from now, has a present value of approximately $0.93 ($1/1.07). Similarly, $1.14 two years from now has a present value of $1, and $1 in two years

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[5] See Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, *in* THE RATE AND DIRECTION OF ECONOMIC ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609 (National Bureau of Econ. Research ed., 1962).

is equivalent to approximately $0.87 today. The further away in time it is paid, the less that payment is worth in present value.[6]

The twenty years of copyright term added by the CTEA provide a flow of additional benefits that is very far into the future, and hence very small in present value. To illustrate, suppose that an author writes a book and lives for thirty more years. In this case, under the pre-CTEA copyright regime, the author or his assignee would receive royalties for eighty years. If the interest rate is 7%, each dollar of royalties from year eighty has a present value of $0.0045. Under the CTEA, this same author will receive royalties for one hundred years. Each dollar of royalties from year one hundred has a present value of $0.0012.

In this example, the present value of total additional revenues under the CTEA can be calculated by adding up the present values of revenues from year eighty-one through year one hundred. Suppose that the work produces a constant stream of revenues, and assume once again that the interest rate is 7%. In this case, the present value of the total return from years eighty-one to one hundred is 0.33% of the present value from years one to eighty.[7] Put differently, under these assumptions, the additional compensation provided by the CTEA amounts to a 0.33% increase in present-value payments to the author, compared to compensation without the twenty-year term extension.[8]

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[6] In general, given an interest rate of r, $1 today grows to $(1+r)^n$ in n years. So $1, n years in the future, has a present value of $1/(1+r)^n$ today.

[7] The present value of $1 each year for eighty years is $14.22 (at a 7% interest rate). The present value of $1 each year from years eighty-one to one hundred is $0.047, which is 0.33% of $14.22.

[8] Analogously, the present value of additional compensation for a new work for hire is 0.47%.

The conclusion above is based on two assumptions: a constant stream of revenues and a 7% interest rate.[9] The assumption of a constant revenue stream for one hundred years is very conservative, that is, it tends to overstate the amount of compensation, because most works lose economic value over time. As evidence, only a small percentage of copyright registrants bother to renew their works, although renewal costs only a few dollars,[10] and only a fraction of renewed copyrights continue to be valuable to copyright holders.[11] If depreciation of value is taken into account, the additional compensation provided by the CTEA is likely to be much less than 0.33%.

The second assumption is the choice of an interest rate. In general, much as investors require higher compensation for riskier investments, a higher interest rate is appropriate for the purpose of evaluating highly uncertain revenue streams. Seven percent is meant to be illustrative, but it is a realistic estimate, perhaps even conservative, given the high degree of uncertainty about the revenues resulting from the production of a creative work. Appendix B reports the present value of additional compensation at different rates; the magnitude remains very small over a range of plausible rates.

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[9] Here, 7% is a real interest rate, defined as the rate of return on capital, net of inflation.

[10] A study of renewals prior to the 1976 Act found a renewal rate of less than 15%. Barbara A. Ringer, *Renewal of Copyright*, *in* STUDIES ON COPYRIGHT 503, 616-20 (Arthur Fisher Memorial ed. 1963).

[11] A pre-CTEA Congressional Research Service study examined a sample of renewed copyrights, finding that 11% of copyrights in books, 12% in musical works, and 26% in motion pictures had some commercial value in 1998. Edward Rappaport, *Copyright Term Extension: Estimating the Economic Values*, Congressional Research Service Report 98-144E (1998).

3. The CTEA's extension of copyright in existing works provides no significant incentive to create new works

The analysis so far has suggested that, under a range of plausible assumptions, the CTEA's term extension for new works provides only a very small economic incentive to create new works, namely much less than one percent. The CTEA's extension of copyright in existing works by twenty years provides essentially no incentive to create new works. By the time of the CTEA's passage, pre-CTEA authors had already made initial investments in creation. Once a work is created, additional compensation to the producer is simply a windfall.

The CTEA's extension for existing works could in theory have an effect on creators of new works, by creating an expectation that, in the future, Congress would extend copyright even more, and that this extension would apply retroactively to existing works. The maximum impact on incentives from this effect, however, is trivial because the current copyright term already has nearly the same present value as an infinite copyright term. Granting a perpetual copyright would increase compensation by at most 0.12% (at a 7% interest rate),[12] or less once declining revenues are taken into account. The actual effect on incentives would be even smaller, if further extensions are not a certainty.[13]

One might argue that the windfall to authors of existing copyrights has a positive consequence, by providing them with

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[12] At a 7% interest rate, the present value of $1 annually for one hundred years is $14.27, and the present value of $1 annually in perpetuity is $14.29, an increase of 0.12%. For a fuller discussion, see Linda R. Cohen & Roger G. Noll, *Intellectual Property, Antitrust and the New Economy*, 62 U. PITT. L. REV. 453, 471 (2001).

[13] Indeed, if the extension for existing works creates an expectation that the future term could be adjusted downward as well as upward, this could have a negative effect on incentives.

more resources for additional creative projects. However, this argument ignores the profit maximization decision of a producer, which takes into account the producer's cost of capital for a given investment. In general, a profit-maximizing producer should fund the set of projects that have an expected return equal to or greater than their cost of capital. If a producer lacks the cash on hand to fund a profitable project, the producer can secure additional funding from financial institutions or investors. If the producer has resources remaining, after funding all the projects whose expected returns are higher than the cost of capital, this remainder should be invested elsewhere, not in sub-par projects that happen to be available to the firm. If a producer pursues the same set of projects in any event, then its incentives will not be improved from the mere fact of a windfall from consumers.[14]

Aside from its effect on the creation of new works, it is also possible as a logical matter that a term extension could affect a copyright holder's incentive to make investments in existing works. Such cases would occur in at most a small subset of copyrights, since extension has an incremental effect only after many years of copyright, and (as suggested above) most works lose their economic value to the initial copyright owner after a very few years. The same will tend to be true of improvements. For those remaining works where post-creation investments might be thought a significant factor, a twenty-year copyright extension will tend to have little or no incremental effect. For investments such as branding, other legal instruments such as trademark and rights of publicity already protect the investment. For other improvements, such as translations, a separate

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[14] The analysis in the text applies to media companies and other producers with substantial resources or access to U.S. capital markets. For a starving artist who lacked resources or access, more resources might permit the artist to fund a larger set of projects. But, for an extension in existing term to help with this, the artist would have to already own an existing copyright about to expire under the pre-CTEA term, which is unlikely.

copyright in the improvement is available. Overall, a twenty-year extension seems unlikely to have a significant effect on post-creation incentives.

B. The CTEA Increases The Social Cost Of Monopoly

A full economic analysis of the CTEA's incremental effects requires an evaluation of its benefits and costs, compared to the effects of the pre-CTEA term. As discussed above, the benefits, in the form of additional incentives to create new works, are at most very small in the case of extended copyright for new works, and insignificant with respect to existing works. For the CTEA to make economic sense as an efficiency-enhancing measure, the costs should be similarly small. The remainder of the brief considers two sources of cost that are affected by the CTEA: misallocations due to inefficient pricing and the effective tax that copyright extension imposes upon the creation of new works.

The economic story of inefficient pricing under monopoly is a familiar one. In a competitive market, sellers undercut one another, with the consequence that price tends to fall to marginal cost. A price equal to marginal cost ensures an efficient allocation of resources, since all consumers who value the good at more than its marginal cost will purchase the good at that price. By contrast, a monopolist can set price above marginal cost for a sustained period of time. At this higher price, some consumers will be unwilling to purchase the good, although they would have purchased it at a price equal to marginal cost.

These missed opportunities for selling give rise to an inefficient allocation, since some consumers value the good more than its marginal cost of production, but less than the higher price charged by the monopolist. The consequences for allocation are important in the case of creative works because marginal costs are very low. Production and distribution of an additional unit are relatively cheap, once the work is created. If copyright gives a producer substantial market power, the

price may be well above marginal cost, in which case a large number of consumers may be excluded.

Since the CTEA lengthens the term of copyright by twenty years, it permits above-cost pricing for a longer period of time, and thus it imposes an incremental burden on society. But it is important to note when these higher costs are incurred. As discussed in the previous section, the increase in incentives to create is very small in present-value terms, because it is so far in the future. By contrast, the additional burden of the CTEA is composed of the effect from extension in existing works, as well as an effect in the future from works not yet created.

The extension for existing works accounts for the bulk of the economic cost. (For works not yet created, the additional cost of term extension is small in present value, just as the additional compensation for creating new works is small in present value.) Again, a present-value analysis helps to underscore this point. The closer to copyright expiration a work was under the pre-CTEA regime, the larger the present value of the additional cost imposed by the CTEA. For works whose copyrights were near expiration when the CTEA was passed, this effect is especially large: a deadweight loss experienced today is 224 times as large in present value as a deadweight loss eighty years from now (at a 7% interest rate).

Given the economic benefits and costs described so far, it is difficult to understand copyright term extension as an efficiency-enhancing measure. Moreover, it is especially difficult to understand the CTEA's extension for existing works by reference to efficiency. For existing works, particularly those whose pre-CTEA copyrights were about to expire, the social cost of monopoly pricing is at a maximum, and here the extension provides no counter-balancing increase in the incentive to produce new works.

The analysis so far has focused upon efficiency. The CTEA can also be understood in terms of its impact upon consumer welfare. A consumer-welfare-based analysis of monop-

oly takes notice of an additional consequence of the copyright holder's monopoly, namely the substantial transfer of resources from consumers to producers that results from prolonging the period of monopoly pricing. Given the redistribution from consumers to producers, the consequences for consumer welfare are more negative than the consequences for efficiency.[15]

II. THE CTEA REDUCES INNOVATION BY RESTRICTING THE PRODUCTION OF NEW CREATIVE WORKS THAT MAKE USE OF EXISTING MATERIALS

A copyright holder has two kinds of monopoly power, each of which is a potential source of producer profit and social cost. First, as discussed above, copyright imparts control over the quantity produced of a work, permitting the holder to maintain a price higher than marginal cost. Second, copyright provides control over the production of derivative works based in part on copyrighted material. In certain circumstances described below, this control results in higher costs and lower production of new creative works.

Many new creative works are built in part out of materials from existing works. For example, new fiction re-tells old stories, new documentaries re-use historical footage, and new music re-mixes and transforms old songs. Improvements in the technology of search and recombination continue to expand the economic importance of new creation based upon old materials.

If building-block materials are copyrighted, there are two sources of inefficiency to consider. If the later innovator must

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[15] The twenty-year increase in European protection of U.S. copyrights will have an additional effect, a transfer of resources from European consumers to the owners of U.S. copyrights. This windfall to U.S. copyright holders is in addition to the transfer from U.S. consumers, and in general will not lower the profit-maximizing price charged to U.S. consumers, or lessen the inefficiency (and transfers from U.S. consumers) resulting from a producer's exercise of market power.

pay for use of the earlier work, this will raise the innovator's cost of making new works, reducing the set of new works produced. In addition, if the process of bargaining and contracting is itself costly, a copyright holder's control over derivative works imposes an additional tax on innovation.

In many cases efficient exchange is hampered by the presence of several kinds of transaction costs. First, a new creator may have difficulty locating an earlier copyright holder, particularly in the case of very old works that have been under copyright for a long time. Uncertainties about the identity of the original author or subsequent assignee of the copyright deepen the difficulty. When copyright holders are difficult to locate, it is costly to track them down, and, if it is even more difficult to locate copyright holders of older works, then transaction costs will increase disproportionately for these works.

Second, for documentaries and many other works, a new creator must negotiate with a large number of previous copyright holders, often for minimal uses of their works. When copyright holders are numerous, it is costly to negotiate and reach agreements with all of them. One result is a "tragedy of the anti-commons": when too many parties have actual or potential vetoes on the creation of an economically valuable object, that object will tend to be under-produced.[16] The resulting costs to society take two forms: the expenditure of resources to organize and complete these agreements, and a reduction in works created due to the higher costs of producing them.

As Ronald Coase and many others have pointed out,[17] economic efficiency is best promoted by legal arrangements that

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[16] See James M. Buchanan & Yong J. Yoon, *Symmetric Tragedies: Commons and Anti-Commons*, 43 J.L. & ECON. 1 (2000).

[17] See Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

minimize transaction costs. Here, a limit on the duration of control rights over derivative works tends to reduce transaction costs. To the extent that the duration of derivative rights is expanded instead, there will tend to be an increase in wasteful expenditures to locate and bargain with copyright holders, as well as a reduction in the creation of new works based upon earlier copyrighted works. Here, the CTEA increases transaction costs by lengthening the rights over derivative works by twenty years, thus shrinking the pool of public domain materials available for recombination into new works.

This conclusion is subject to the condition that the owner of the original copyright is not somehow the most efficient creator of the subsequent work. Although sometimes applied to patent, this argument has little application to copyright. In copyright, diverse, "abundant" expression is the source of value, not successive refinements with respect to an agreed-upon metric of quality,[18] and a large number of disparate innovators may be better at producing abundance. Moreover, in the two situations described above, existing copyright holders are certainly not at an advantage. If the copyright holder is unaware of the copyright (for example, a descendant of the original author) or its value for creating derivative works, he is unlikely to explore possible derivative works in a vigorous way. And, when many existing works have to be pooled and recombined to create a new work, the owner of a single existing work is at no practical advantage in creating the new work, as she still must negotiate with all the other owners. In the case of this single owner, too, transaction costs are minimized when the later innovator has a right to use earlier materials.

In short, a lengthened copyright term under the CTEA keeps additional materials out of new creators' hands. Would-be new creators face increased transaction costs: the necessity to engage in costly locating (especially for very old works, the

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[18] See Paul Goldstein, *Infringement of Copyright in Computer Programs*, 47 U. PITT. L. REV. 1119, 1123 (1986).

very ones that would be in the public domain but for the CTEA) and bargaining with multiple parties. These higher costs give new creators less incentive to produce. As a result, the CTEA imposes two kinds of burden on society, fewer new works produced and higher transaction costs in the creation of some works.

CONCLUSION

Comparing the main economic benefits and costs of the CTEA, it is difficult to understand term extension for both existing and new works as an efficiency-enhancing measure. Term extension in existing works provides no additional incentive to create new works and imposes several kinds of additional costs. Term extension for new works induces new costs and benefits that are too small in present-value terms to have much economic effect. As a policy to promote consumer welfare, the CTEA fares even worse, given the large transfer of resources from consumers to copyright holders.

Respectfully submitted.

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APPENDIX A

LIST OF SIGNATORIES TO THE BRIEF

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Nobel Memorial Prize in Economic Sciences, 1976

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APPENDIX B

PRESENT VALUE OF ADDITIONAL COMPENSATION

For an individual author:*

Interest Rate	*Compensation, Years 1-80*	*Additional Compensation, Years 81-100*	*Percent Increase*
5%	$19.60	$0.25	1.28%
7%	$14.22	$0.05	0.33%
10%	$10.00	$0.00	0.04%

For a work for hire:

Interest Rate	*Compensation, Years 1-75*	*Additional Compensation, Years 76-95*	*Percent Increase*
5%	$19.48	$0.32	1.65%
7%	$14.20	$0.07	0.47%
10%	$9.99	$0.01	0.07%

* Individual author calculations assume authorship thirty years prior to death, which implies eighty years of copyright without the CTEA, one hundred years of protection with the CTEA.

Calculations assume a constant annual revenue stream. For ease of exposition, annual payments are assumed to be $1, but the percentage increases are unchanged for larger or smaller constant annual streams.